

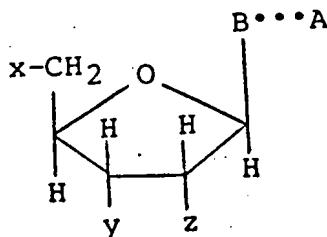
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MODIFIED NUCLEOTIDES AND  
METHODS OF PREPARING AND USING SAME

ABSTRACT OF THE DISCLOSURE

SA Compounds having the structure:

T10X

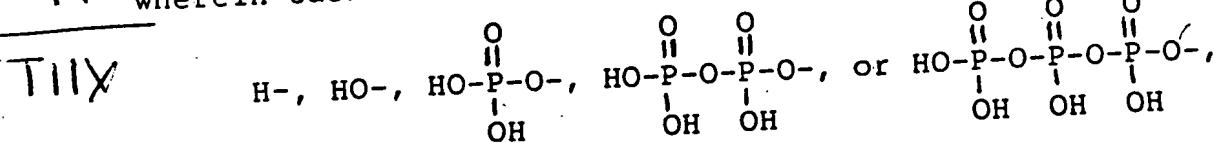


wherein B represents a purine, 7-deazapurine, or pyrimidine moiety covalently bonded to the C<sup>1'</sup>-position of the sugar moiety, provided that when B is purine or 7-deazapurine, it is attached at the N<sup>9</sup>-position of the purine or 7-deazapurine and when B is pyrimidine, it is attached at the N<sup>1</sup>-position;

P1 wherein A represents a moiety consisting of at least three carbon atoms which is capable of forming a detectable complex with a polypeptide when the compound is incorporated into a double-stranded ribonucleic acid, deoxyribonucleic acid duplex, or DNA-RNA hybrid;

P1 wherein the dotted line represents a chemical linkage joining B and A, provided that if B is purine, the linkage is attached to the 8-position of the purine, if B is 7-deazapurine, the linkage is attached to the 7-position of the deazapurine, and if B is pyrimidine, the linkage is attached to the 5-position of the pyrimidine; and

P1 wherein each of x, y and z represents



P1 + 10 either directly, or when incorporated into oligo- and poly-nucleotides, provide probes which are widely useful.

PA Applications include detection and localization of poly-  
5 nucleotide sequences in chromosomes, fixed cells, tissue  
sections, and cell extracts. Specific applications include  
chromosomal karyotyping, clinical diagnosis of nucleic acid-  
containing etiological agents, e.g. bacteria, viruses, or  
fungi, and diagnosis of genetic disorders. EA